REMARKS

Claims 6-8 and 13 are pending. Claims 6 and 7 have been amended. New claim 13 has been added. No new matter has been introduced. Reexamination and reconsideration of the application are respectfully requested.

In the October 15, 2001 Office Action, the Examiner rejected claims 6-8. The Examiner rejected claims 7 and 8 under 35 U.S.C. § 112, second paragraph, for failing to set forth the subject matter that applicant regards as the invention. The Examiner rejected claim 6 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,011,762 to Watanabe et al. (the Watanabe reference). The Examiner rejected claim 6 under 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 6,195,319 to Ohshita et al. (the Ohshita reference), considered with JP 3-187021. The Examiner rejected claims 7 and 8 under 35 U.S.C. § 103(a) as being obvious over the Ohshita reference or the Watanabe reference, further considered with U.S. Patent No. 5,859,830 to Eastman et al. (the Eastman reference). These rejections are respectfully traversed.

The present invention relates to a system and method of recording information on an optical disk utilizing a mark-length recording scheme. Tracking control is performed using tracking error signals detected during an OFF period and a rear time segment within an ON period of a recording pulse signal. The time segment for detecting the tracking error signal within the recording pulse ON period is variably controlled in accordance with recording conditions, such as a disk type and recording speed.

New independent claim 13 recites:

An optical disk method for recording information on an optical disk, based on a

mark-length recording scheme, by forming pits sequentially from an inner circumference to an outer circumference of the optical disk via a light beam irradiated onto a track formed as a groove or land on a recording surface of the optical disk,

wherein tracking control is performed in such a way that a center of an optical axis of the light beam is offset, by a predetermined amount, from a center line of the track toward the outer circumference of the optical disk, *the predetermined amount being so that a tendency towards formation of a pit on an inner circumference side of the track due to heat remaining in an adjacent inner circumference track is canceled and the pit is accurately formed on the center line of the track.*

The Watanabe reference is directed to an optical disk apparatus that optically records signals in a recording medium and reproduces the recorded signals using a laser beam emitted from a light source, such as a laser. More specifically, the Watanabe reference relates to an optical disk apparatus equipped with a focus control system for controlling focusing of the light beam irradiating the recording medium so that the light beam is focused on a prescribed position of the recording medium.

The Watanabe reference does not disclose, teach, or suggest the method of independent claim 13. Unlike in independent claim 13, the Watanabe reference does not teach tracking control being performed in such a way that a center of an optical axis of the light beam is offset, by a predetermined amount, from a center line of the track toward the outer circumference of the optical disk, *the predetermined amount being so that a tendency towards formation of a pit on an inner circumference side of the track due to heat remaining in an adjacent inner circumference track is canceled and the pit is accurately formed on the center line of the track.* The Watanabe reference only

teaches that to detect tracking offset, (1) a maximum value and a minimum value of a tracking error signal are detected and the tracking offset amount is calculated from a difference between these values, or the tracking offset amount is calculated from an integrated value of the sample TE signal, and (2) a compensation amount is calculated from this tracking offset amount. (Col. 41, line 55 to col. 42, line 40; see Fig. 25(a).)

The Watanabe reference does not disclose anything more about tracking offset and there is no teaching of tracking control being performed in such a way that a center of an optical axis of the light beam is offset, by a predetermined amount, from a center line of the track toward the outer circumference of the optical disk, *the predetermined amount being so that a tendency towards formation of a pit on an inner circumference side of the track due to heat remaining in an adjacent inner circumference track is canceled and the pit is accurately formed on the center line of the track*, as in independent claim 13.

The Ohshita reference, alone or in combination with JP 3-187021, does not make up for the deficiencies of the Watanabe reference. The Ohshita reference is directed to an optical pickup position control device that automatically adjusts tracking with precision and in a short time. Two deviation signals, which express deviation of a light beam, projected by a pickup which uses the three-beam method, from a target track of a disk, are digitized by two AD converters. Two high-pass filters extract from the deviation signals AC signals, producing a tracking error signal. Further, two low-pass filters extract from the deviation signals DC signals (offset components). Two other low-pass filters extract from the deviation signals low-band signals containing DC components. Using the various foregoing signals, a control circuit calculates correction

values to be applied to two offset correcting circuits and to two gain/balance correcting circuits, and corrections are performed collectively and simultaneously on the basis of these correction values.

The Ohshita reference does not disclose, teach, or suggest the method of independent claim 13. As acknowledged by the Examiner, "Ohshita et al. lack any specific mentioning of the TE signal during a non-recording period." (Office Action, paragraph No. 8.) Moreover, unlike in independent claim 13, the Ohshita reference makes no mention of tracking control being performed in such a way that a center of an optical axis of the light beam is offset, by a predetermined amount, from a center line of the track toward the outer circumference of the optical disk, *the predetermined amount being so that a tendency towards formation of a pit on an inner circumference side of the track due to heat remaining in an adjacent inner circumference track is canceled and the pit is accurately formed on the center line of the track.* The Ohshita reference only shows that a TE signal producing circuit may utilize a storage (memory) section. (Col. 8, lines 25-59; see Fig. 1.)

Additionally, JP 3-187021 only discloses that a TE signal output may be utilized during a non-recording period, and it makes no mention of tracking control being performed in such a way that a center of an optical axis of the light beam is offset, by a predetermined amount, from a center line of the track toward the outer circumference of the optical disk, *the predetermined amount being so that a tendency towards formation of a pit on an inner circumference side of the track due to heat remaining in an adjacent inner circumference track is canceled and the pit is accurately formed on the center line of the track*, as in independent claim 13.

The Eastman reference does not make up for the deficiencies of the Watanabe reference and the Ohshita reference. The Eastman reference is directed to an apparatus and method for providing dynamic tracking error detection and control in an optical recording system in which an incident beam records data on a medium in the form of marks. A diffraction-based mark formation effectiveness (MFE) signal is generated by monitoring a reflected write signal in part of the return beam aperture or in multiple zones of the return beam aperture and is indicative of a characteristic of the marks formed on the medium. A position signal is generated to provide an indication of cross-track movement of the incident beam relative to a tracking structure on the medium. The tracking structure may be a wobbled groove on an optical disk recording medium. Variations in the diffraction-based MFE and position signals are correlated to provide a dynamic tracking error signal (TES). The diffraction-based MFE and position signal variations may be correlated by, for example, multiplying the two signals together in a multiplier circuit, or using the position signal to control application of the diffraction-based MFE signal to particular inputs of a signal difference circuit. The dynamic TES may be utilized in a servo-loop with or without a push-pull signal or other conventional tracking signal.

The Eastman reference does not disclose, teach, or suggest the method of independent claim 13. Unlike in independent claim 13, the Eastman reference makes no mention of tracking control being performed in such a way that a center of an optical axis of the light beam is offset, by a predetermined amount, from a center line of the track toward the outer circumference of the optical disk, *the predetermined amount being so that a tendency towards formation of a pit on an inner circumference side of*

the track due to heat remaining in an adjacent inner circumference track is canceled and the pit is accurately formed on the center line of the track. The Eastman reference only shows that a TE signal may be provided during recording. (Col. 2, lines 47-63.) Accordingly, applicant respectfully submits that independent claim 13 distinguishes over the above-cited references.

Independent claims 6 and 7, both as amended, recite limitations similar to independent claim 13. Accordingly, applicant respectfully submits that independent claims 6 and 7, both as amended, distinguish over the above-cited references for the reasons set forth above with respect to independent claim 13.

In response to the Examiner's rejection of claims 7 and 8 under 35 U.S.C. § 112, second paragraph, independent claim 7 has been rewritten to include the limitation of the tracking error signal being passed through for a recording signal OFF period. Applicant respectfully submits that independent claim 7, as amended, is in condition for allowance.

Claim 8 directly depends from independent claim 7, as amended. Accordingly, applicant respectfully submits that claim 8 distinguishes over the above-cited references and is allowable for the reasons set forth above with respect to independent claim 7, as amended.

In the Amendment dated January 4, 2001, applicant elected for the continued prosecution of and stated that claims 5-8 are readable upon the species of pages 30-32 (see also Fig. 11). However, applicant believes that original independent claim 1 is readable to both Species (a) of pages 20-30 (see also Fig. 5), *and* Species (b) of pages 30-32 (see also Fig. 11). Applicant submits that new independent claim 13, based on

original independent claim 1 as filed, is generic to Species (a) and Species (b).

Applicant believes that the foregoing amendments place the application in condition for allowance, and a favorable action is respectfully requested. If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call either one of the undersigned attorneys at the Los Angeles telephone number (213) 488-7100 to discuss the steps necessary for placing the application in condition for allowance should the Examiner believe that such a telephone conference would advance prosecution of the application.

Respectfully submitted,

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